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## The Attitudes of Consumers toward Direct Advertising of Prescription Drugs

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### Synopsis .....

*Attitudes about prescription drug advertising directed to consumers were assessed in 1,509 persons who had viewed prototypical advertisements for fictitious prescription drug products.*

*Although many subjects were generally favorable toward the concept of drug advertising directed to consumers, strong reservations were also expressed, especially about television advertising.*

*Prescription drug advertising did not appear to undermine the physician's authority, since respondents viewed the physician as the primary drug decision-maker. However, the physician was not perceived as the sole source of prescription drug information.*

*Television advertising appeared to promote greater information-seeking about particular drugs; however, magazine ads were more fully accepted by subjects. Furthermore, magazine ads led to enhanced views of the patient's authority in drug decision-making. The greater information conveyed in magazine ads may have given subjects more confidence in their own ability to evaluate the drug and the ad.*

*Ads that integrated risk information into the body of the advertisement were more positively viewed than ads that gave special emphasis to the risk information. The results suggest that consumer attitudes about prescription drug advertising are not firmly held and are capable of being influenced by the types of ads people view. Regulation of such ads may need to be flexed to adapt to the way different media are used and processed by consumers.*

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**T**RADITIONALLY, THE PROMOTION OF PRESCRIPTION drugs has been limited to physicians and other health professionals who dispense or administer

medicines. Several pharmaceutical companies, however, have recently expressed an interest in promoting prescription drugs directly to consumers.

Initial experience with disease-oriented, institutional, and limited direct-to-the-consumer advertisements has prompted several firms to consider actively and state publicly their desire to test-market consumer-directed advertisements that name and describe specific prescription medicines (1).

Several pharmaceutical companies have initiated advertising campaigns directed at consumers to increase the number of people seeking care for underdiagnosed conditions. The Pfizer "Partners in Healthcare" series is the broadest such campaign that uses both television and print media to expand consumer awareness of conditions such as angina, depression, and arthritis. Magazine advertising has been used by Ayerst to increase the number of women seeking treatment for osteoporosis and by Syntex to increase physician visits for dysmenorrhea. In the wake of Johnson and Johnson's weathering of the Tylenol crisis, pharmaceutical companies have recognized that firms with a positive reputation among consumers fare better at such times. Thus, Eli Lilly, Upjohn, Dupont, Ciba-Geigy, and others have initiated institutional advertising campaigns to increase and improve consumer awareness of the firm and its reputation.

Although pharmaceutical company advertising to increase visits to physicians and improve company reputation has been well received, the advertising of prescription drugs directly to consumers has proved much more controversial. Merck Sharpe and Dohme advertised the availability of its antiviral vaccine, Pneumovax, directly to elderly consumers in magazine such as *Readers Digest* and *Modern Maturity*. Readers were asked to take a tear-off coupon to their physician for an evaluation of whether or not the person is a candidate for Pneumovax therapy. Boots Pharmaceuticals advertised the availability of its antiarthritis drug, Rufen, through newspaper and television advertising in Tampa, FL. The Boots ads emphasized the cost-saving of Rufen compared to Motrin, a chemically equivalent compound. Evaluation of the Boots campaign indicated that awareness of the product doubled during the 6-week period of the campaign (2).

Although neither the Merck nor Boots Pharmaceuticals campaigns reported a significant increase in sales, a number of pharmaceutical companies have expressed their interest in further developing consumer advertising campaigns. The prospect of consumer advertising of prescription drugs has been the subject of a growing controversy in the public and trade press. Proponents of this

form of advertising suggest that advertising could inform patients better about the proper use of prescription drugs, reduce the number of people who do not seek treatment because they are unaware of their condition or do not know that effective treatment exists, speed the adoption and utilization of important medical advances, and generally help satisfy the consumer's desire to know more about prescription drugs.

Opponents of consumer advertising of prescription drugs suggest that this form of advertising could lead patients to pressure physicians to prescribe unnecessary or unindicated drugs, increase the price of drugs, since consumer advertising is generally much more costly than physician advertising, confuse patients by leading them to believe that some minor difference represents a major therapeutic advance, potentiate the use of brand name products rather than cheaper, but equivalent, generic drugs, and foster increased drug taking in an already overmedicated society.

Given wide differences of opinion, the public's view of the desirability and value of advertisements for prescription drugs is an important factor to consider when formulating public policy on this issue. A limited number of studies have been conducted to obtain the attitudes, beliefs, and opinions of consumers and health professionals.

To obtain initial perspectives, the Food and Drug Administration (FDA) solicited the views of approximately 1,200 people attending 50 meetings in various locations throughout the United States from April through October 1983. About half (45 percent) of those attending the meetings were members of the consumer advocacy community (although some consumers were not affiliated with any association), another 29 percent were affiliated with government or public health organizations, and the remaining participants represented a variety of academic, health professional, or communications fields.

Overall, half the participants were opposed to all forms of direct-to-the-consumer advertising of prescription drugs, 20 percent were in favor, and 30 percent were in favor only if it was carefully controlled by government regulatory agencies.

A second survey of the public's attitudes was conducted by the Lifetime Cable Network. Participants in the study were viewers of "Physician's Journal Update," a program directed to health professionals that contains advertisements for prescription drug products aimed at physicians. Viewers of the program were asked to phone a toll-free number. Close to 1,000 consumers (N = 990) telephoned from October to December 1983. They were

asked several questions about the programming and the advertising of prescription drugs directly to consumers. Viewers were positively predisposed; 91 percent believed that prescription drug advertising would inform patients better, 95 percent said it would make them aware of new therapies, and 94 percent said it would be of benefit to the consumer. However, some respondents noted concerns about the prospect: 32 percent said the ads would confuse patients, and 32 percent said that advertising prescription drug products to consumers could get patients to pressure physicians to prescribe drugs.

While the FDA data suggest concern and resistance among consumers, the Lifetime Cable data suggest support and endorsement. Both studies, however, are severely restricted in generalizability because of the biased sampling and weak methodologies.

Two recent surveys of consumers, using more acceptable methods for sample selection, however, indicated that conflicts in consumer attitudes may be a function of more than sampling biases. In an unpublished mail survey of a random sample of 133 Minnesota State residents, Leonard N. Rosenberg and co-workers of the University of Minnesota College of Pharmacy found a diversity of feelings about direct-to-the-consumer advertising of prescription drugs. Overall, one-third (34 percent) of the sample objected, 37 percent did not object, and 28 percent said they had mixed reactions. Underlying this general attitude were a number of specific beliefs. More than half of the respondents (55 percent) believed that drug advertising could create a more informed consumer and would not damage the reputation of physicians and pharmacists (59 percent). However, 51 percent said that advertising drugs to consumers would lead to drug abuse and that it was dangerous to advertise drugs directly to consumers. Two-thirds (67 percent) said that prescription drug advertising would increase self-medication.

In a telephone survey of 1,503 randomly selected adults during the summer of 1984 (conducted for the American Medical Association), respondents were asked their view of advertising prescription drugs on television (3). Two-thirds (62 percent) said they oppose consumer-directed television advertising of prescription drugs, and one-third (34 percent) said they were in favor. Those supporting advertising of drugs on television mentioned making more informed choices (25 percent) and general education (24 percent) as the primary reasons. Less frequently mentioned responses were consumer protection (15 percent), reductions of drug costs (presumably through increased competition) (13 percent), and

increasing consumer awareness of new medication (7 percent).

Those opposing direct-to-the-consumer advertising of prescription drugs described as their reason the belief that physicians should be the judge (25 percent) and fear that it would increase drug abuse (21 percent). Other reasons for opposition were lack of consumer understanding (11 percent), harm to children (9 percent), undermining the health professional's role or relationship with the patient (7 percent), misleading the public (5 percent), or causing higher prices (4 percent).

The AMA survey apparently indicates a greater preponderance of negative attitudes than the Minnesota State survey. However, the AMA survey solicited views of television advertising where the Minnesota survey did not specify media. As suggested by Freshnock and Shubat, (3) because people have had little experience with consumer directed drug advertising, few respondents are likely to have formed strong attitudes. Slight variations in the wording of the questions could influence respondents to form new opinions. Furthermore, differing expectations about the type of products advertised, the advertising appeals, and the media could lead to differing opinions about direct-to-the-consumer advertising.

The lack of firmly entrenched attitudes suggests that initial reactions to specific ads may help form general attitudes about direct-to-the-consumer advertising of prescription drugs. This view is supported by studies of physicians' attitudes. When asked their opinion about direct-to-the-consumer advertising of prescription drugs, the majority of physicians state their opposition. For example, in a poll taken by AMA News, 69 percent of the physicians surveyed stated they were opposed (4).

In another survey of 1,000 physicians conducted by AMA, 84 percent said they were opposed to drug advertising on television (5). Lack of public understanding (34 percent), reduction of physician discretion (17 percent), and increased pressure on physicians to prescribe drugs (17 percent) were the major reasons for opposition. However, in an unpublished study conducted by the Ogilvy and Mathers Advertising Agency and presented by Davis at a 1983 Drug Information Association meeting in Williamsburg, VA, when physicians are first shown copies of prototypical consumer advertisements, their attitudes about direct-to-the-consumer advertisement become more positive. Evidently, physician fears about patient confusion and undermining of physician authority may be disabused by particular advertisements.

As with physicians, consumer attitudes about prescription drug advertisements may be based on an inappropriate generalization about the type of product advertised, the promotional appeal, and the methods used to inform, convince, and persuade consumers. With no clear ideas in mind about the "object" being assessed, consumer attitude data collected thus far may reflect only weakly held beliefs.

The data presented in the present study are derived from measuring consumer reactions to prototypical consumer advertisements for prescription drugs. The purpose of the study was to assess advertisements that varied the nature and amount of risk information in consumer advertisements for prescription drugs. Subjects were shown either magazine or television ads for hypothetical prescription drug products (for hypertension and arthritis) and asked a number of questions measuring knowledge, beliefs, and attitudes. Our paper focuses solely on consumers' global attitudes about prescription drug advertising. Other results of the study are discussed in the final report on this survey (6).

## Method

The study was conducted in four cities—Buffalo, Cleveland, Houston, and Seattle. Active telephone exchanges with a 10-mile radius of the testing facility in each city comprised the test universe. Households were telephoned at random using a random-digit dialing technique. All persons over 18 years of age in each contacted household were enumerated and a set of screener questions administered to determine subject eligibility. All persons in the contacted households who had hypertension or arthritis were asked to participate, as well as one-third of those without these conditions. All subjects were asked to travel to a central facility in their city to view some health information materials. Subjects were offered \$20 as reimbursement for travel and time expenses. Followup phone calls and reminder letters were used to improve participation rates.

Of the 11,923 people found eligible, 6,100 were asked to participate; 2,753 agreed and were scheduled. About half (52 percent) of those agreeing attended a study session ( $N = 1,509$ ). When they arrived at a study session, subjects (in groups of about 20) were either provided a magazine or asked to view a telephone show. Embedded in the stimulus material were two ads for fictitious prescription drugs: Dirovin, an antihypertensive, and Artomine, an antiarthritic. The ads were developed by a pro-

fessional advertising agency and pretested in focus groups for communication clarity.

The theme of the arthritis ad was that this once-a-day medication allowed the user to "rediscover the joys of simple tasks" such as needlework. The magazine ad pictured two hands with some needlepoint and the television scenario had a woman showing her granddaughter how to needlepoint. The theme for the high blood pressure drug ad was that high blood pressure was a serious disease and keeping blood pressure low was important. The graphic portion showed a man hitting a device resembling a carnival strength pole. The marking on the pole (resembling a high blood pressure scale) showed a safe range midway up the pole. Above that level was the danger zone. Dirovin was described and shown as a patch to be worn on the chest and changed once a week. The once a week patch was promoted as keeping blood pressure within safe limits.

Ten versions of each ad were developed for each medium. The versions varied the nature and extent of risk information included in the advertisement. The variables manipulated were the amount of risk information (2 or 4 items about risks), risk emphasis (whether the risks were made to stand out or were more fully integrated into the ad), and risk specificity (whether the warnings were generally applicable to all drugs or specific to the individual drug described in the ad). Two control ads were also developed (a no-risk ad that deleted any reference to risk and a thorough risk disclosure ad that contained several paragraphs of risk information displayed in small print or a video scroll).

Subjects were exposed to only one ad variation for each drug. Each television ad was 60 seconds long, and the magazine ads were each a full page in size. No other ads were included in the television show. However, 16 other full page ads for other products were included in the magazine.

After viewing the television show (which took 17 minutes) or reading the magazine (for 20 minutes), subjects were given a questionnaire. Recall, knowledge, and attitudes about the drug were solicited in the first part of the questionnaire. Results of these questions were reported elsewhere (6). Subjects were then asked to complete a 14-item questionnaire that measured the extent to which they agreed or disagreed with the statements about the desirability and effects of advertising prescription drugs directly to consumers. A five-point Likert-scale measured the response to each statement. To assure that respondents understood the concept being addressed, the question was introduced with a short

paragraph that explained the reasons some people favored the idea of advertising prescription drugs directly to the public and why other people were opposed.

## Results

There was no significant difference between the sample and the 1980 census data on the U.S. population in terms of sex, race, and marital status. About half the sample (53 percent) was female, 85 percent was white, and 63 percent was married. However, the sample group was older and better educated than the general population. About half (45 percent) of the sample was 50 or older, compared to one-third (36 percent) of the noninstitutionalized adult population. More than half (60 percent) of the sample had at least some college education, compared to one-third (37 percent) of the population. As a result of the oversampling, the incidence of arthritis (36 percent) and high blood

pressure (35 percent) was about double in the sample compared to the general population.

**Overall attitude.** Table 1 displays the percent of subjects agreeing and disagreeing with the 14 attitude items. Overall, subjects were positively predisposed to the concept of drug advertising to consumers. However, some areas of specific concern were also noted. Two-thirds (66 percent) believed that prescription drug ads would provide useful information, and half (50 percent) believed the ads would benefit the consumer. The great majority (88 percent) saw the ads as stimulating information-seeking from the physician. Overall, 61 percent said they would like to see advertisements for prescription drugs, although in response to another question, 35 percent said that drugs should not be advertised directly to consumers.

There was more acceptance of magazine advertising than television advertising. More subjects agreed than disagreed that television advertising

Table 1. Subject agreement—disagreement with general attitude items

Item description	Percentage of subjects					Mean rating <sup>1</sup>		
	Strongly agree 1	Slightly agree 2	Neither agree nor disagree 3	Slightly disagree 4	Strongly disagree 5	Overall	Magazine	TV
1. I would like to see advertisements for prescription drugs .....	37	24	13	10	16	2.45	2.38	<sup>2</sup> 2.53
2. I think television commercials for prescription drugs would be a bad idea .....	28	16	17	19	20	2.87	2.72	<sup>3</sup> 3.03
3. Magazine advertising for prescription drugs is a bad idea .....	18	12	18	26	26	3.31	3.35	2.26
4. Most people would be able to tell it they were being misled in an ad for a prescription drug .....	11	12	14	23	40	3.69	3.67	3.71
5. Only a physician can tell if an advertisement for prescription drug is truthful or not .....	32	20	12	20	16	2.69	2.67	2.70
6. I would seek more information about a drug if I heard about it on television or in a magazine ad .....	69	19	6	2	3	1.51	1.58	<sup>4</sup> 1.44
7. Advertising prescription drugs directly to consumers will benefit consumers .....	25	25	22	12	17	2.71	2.69	2.75
8. Prescription drugs should not be advertised directly to consumers .....	22	13	17	23	25	3.16	3.16	3.16
9. Prescription drug ads would provide useful information to consumers .....	36	30	14	8	11	2.30	2.28	2.33
10. Prescription drug advertising to consumers will cause drug prices to go up .....	24	22	33	10	11	2.62	2.66	2.59
11. If a prescription drug is advertised to consumers, it must be safe to use .....	20	7	14	19	39	3.50	3.44	3.58
12. I would never ask my doctor to prescribe a specific drug for me .....	20	11	16	23	29	3.29	3.14	<sup>5</sup> 3.48
13. Only a doctor can tell if a prescription drug should be used .....	55	19	8	11	6	1.96	1.97	1.96
14. Most patients can tell if a prescription drug should or should not be used .....	5	7	10	22	56	4.18	4.09	<sup>4</sup> 4.27

<sup>1</sup> Five-point scale as shown at left.

<sup>2</sup> Difference between magazine and television means significant at  $P < .05$ .

<sup>3</sup> Difference between magazine and television means significant at  $P < .001$ .

<sup>4</sup> Difference between magazine and television means significant at  $P < .01$ .

<sup>5</sup> Difference between magazine and television means significant at  $P < .0001$ .

was a bad idea, but the opposite was true for the magazine advertising.

Many subjects (46 percent) saw advertising drugs to the consumer as increasing drug costs, although 33 percent were neutral in their opinion about its impact on drug prices. The physician was clearly seen as the drug decision-maker, as three-quarters (74 percent) agreed that only a doctor could tell if the drug should or should not be used, and 78 percent disagreed that most patients could tell if prescription drugs should be used. However, the patient was not perceived as totally passive, as the majority of subjects (52 percent) said they would ask their physician to prescribe a specific drug.

The physician was not universally perceived as the only person able to discern the truthfulness of drug ads. One-third (36 percent) disagreed that only a physician could tell if a prescription drug ad was truthful or not, and one-quarter (23 percent) agreed that most people could discern the truthfulness of an ad. Subjects were not convinced that societal controls would protect them from the advertising of drugs as most (58 percent) disagreed that if a drug was advertised it must be safe.

**Influence of media.** To examine how the type of medium in which the ads were presented influenced general attitudes about drug advertising, analyses of variance tests were performed comparing mean scores on each of the items for the two media. Table 1 also lists the overall means for each medium on each item. Those viewing the magazine ads were more likely to agree that most patients could tell if a prescription should or should not be used [ $F(1,1419) = 8.59, P < .01$ ], that they would never ask their physician to prescribe a specific drug [ $F(1,1415) = 18.49, P < .01$ ], that they would like to see prescription drug ads [ $F(1,1435) = 3.39, P < .05$ ], and that television advertising was a bad idea [ $F(1,1436) = 15.54, P < .01$ ]. Television viewers were likely to agree that they would ask their physician about a drug if they heard about it on an ad [ $F(1,1434) = 7.06, P < .01$ ].

**Predictors.** The influence of demographic factors and the variations of the advertisement on attitudes were examined using a number of stepwise regressions. However, to reduce the number of attitude dimensions, a varimax factor analysis was first performed. Three factors with an eigenvalue over one were extracted. Table 2 lists the items loading heaviest on each factor. A minimum loading of .50 was used as a cutoff for including any items in a factor list. The first factor, "positive evaluation,"

Table 2. General attitude factor structure

Item number	Description	Factor loading
<i>Factor 1—positive evaluation</i>		
1.	I would like to see advertisements for prescription drugs	.80
2.	I think television commercials for prescription drugs would be a bad idea	-.74
3.	Magazine advertising for prescription drugs is a bad idea	-.77
7.	Advertising prescription drugs directly to consumers will benefit consumers	.78
8.	Prescription drugs should not be advertised directly to consumers	-.79
9.	Prescription drug ads would provide useful information to consumers	.76
<i>Factor 2—physician authority</i>		
5.	Only a doctor can tell if an advertisement for a prescription drug is truthful or not	.81
13.	Only a doctor can tell if a prescription drug should be used	.84
<i>Factor 3—patient authority</i>		
4.	Most people would be able to tell if they were being misled in an ad for a prescription drug	.63
11.	If a prescription drug is advertised to consumers, it must be safe to use	.56
14.	Most patients can tell if a prescription drug should not be used	.78

was composed of six items indicating positive attitudes toward prescription drug ads. The second factor contained two items reinforcing "physician authority" and the third factor contained three items measuring "patient authority" and societal control.

To examine the relationship between these attitude factors and the demographic and ad variation predictors, a series of stepwise multiple regression analyses were performed. Initially, each subject's scores on the three factors were compiled by multiplying item responses from the Likert scale by the factor loadings and summing the scores for each of the items in the factor. The set of predictor variables included the demographic variables of age, sex, educational level, presence of hypertension, presence of arthritis, whether prescription drugs were used regularly, and the city of residence (dummy coded). The ad variation variables were media (magazine or television), risk emphasis (integrated as opposed to emphasized risks), amount of risk (four or two items), and risk specificity (general as opposed to specific). Forward stepwise regressions were performed using  $\alpha = .10$  as a cutoff for introduction items into the predictor model.

Table 3 displays the results of the regression analyses for the three factors. The strongest predictor of having positive feelings toward prescription drug advertising was city of residence. People who

Table 3. Demographic variables associated with attitude factors

Step entered <sup>1</sup>	Variable name	Variance explained <sup>2</sup>
<i>Factor 1—positive evaluation</i>		
1.	Not living in Seattle <sup>3</sup>	.027
2.	Lower education <sup>3</sup>	.045
3.	Integrated ads <sup>4</sup>	.047
<i>Factor 2—physician authority</i>		
1.	Lower education <sup>3</sup>	.088
2.	Being older <sup>3</sup>	.109
3.	Not living in Seattle <sup>4</sup>	.112
<i>Factor 3—patient authority</i>		
1.	Lower education <sup>3</sup>	.052
2.	Not living in Seattle <sup>3</sup>	.059
3.	Living in Houston <sup>3</sup>	.062
4.	Magazine ads <sup>4</sup>	.065

<sup>1</sup> Step variable entered into the regression equation.

<sup>2</sup> R<sup>2</sup> for that variable and all variables previously entered into the equation.

<sup>3</sup> P < .05.

<sup>4</sup> P < .10.

lived in Seattle had the most negative feelings. Having a lower educational level was also a significant predictor of positively evaluating prescription drug ads. Viewing ads that integrated the risk information more fully into the ad promoted positive attitudes. Together, these variables explained less than 5 percent of the variance so their cumulative explanatory power must be considered as extremely weak.

A slightly stronger set of predictors (explaining 11 percent of the variance) was associated with attitudes about physician authority. Less educated and older subjects tended to view the physician as an authority, whereas Seattle subjects tended not to view the physician as the sole authority regarding prescription drugs. The patient's authority was affirmed most strongly by subjects in the lower educational levels. Cities of residence (living in Houston and not living in Seattle) were the next strongest predictor variables, with viewing magazine ads and taking prescription drugs on a regular basis as marginally significant predictors. However, only 6 percent of the variance was explained by these variables.

## Discussion

Having seen prototype prescription drug ads, people in this study appeared generally acceptive of the concept, although they expressed some strong reservations. Subjects saw some overall benefit to advertising prescription drugs to the consumer. However, they were less positive about specific media, especially television. Therefore, the strong

negative feeling found in the AMA survey may be due to their emphasis on television, not only to the concept of advertising prescription drugs to consumers. On the other hand, some of the positive attitudes may have reflected the desire for more drug information rather than an endorsement of advertising of prescription drugs per se.

The primary perceived influence of the prescription drug advertising appears to be on information seeking. The physician was clearly perceived as the drug decision-maker. However, most subjects viewed asking the physician about prescribing a specific drug as a permissible activity. One of the criticisms of prescription drug advertising to consumers is that the physician's role as a decision-maker would be undermined. This study does not support any "confrontational" attitudes, nor is there a direct questioning of physician authority. However, the seeking of information and suggestion of a specific prescription drug to the physician are perceived as possible outcomes of drug advertising. Although patients may not view this as undermining the physician-patient relationship, physicians might well perceive patient "suggestions" as undermining their control and authority.

Those who viewed the television ads were more likely to state that they would seek more information from an ad and were more likely to state that they would ask their physician to prescribe a specific drug than those viewing the magazine. Television may stimulate more questions and (in the patient's mind) legitimize their requests for a drug. Although television subjects were less likely to welcome ads for prescription drugs, they were more positive about television advertising than those viewing the magazine. We can speculate that people may not want to see more television advertising in general; however, having seen prototypical television commercials, the concept of television advertising prescription drugs may not be as offensive as it sounds.

The finding that people who live in Seattle were more likely to be opposed to television advertising, to physician's authority, and to patient's authority suggests that the constellation of attitudes we measured cuts across a number of values that are not necessarily correlated. Seattle subjects were the most skeptical of advertising, of physicians, and of their own ability to make drug use decisions or evaluate the truthfulness of ads. Unfortunately, there is no clear reason why city of residence should have had such an influential role in predicting attitudes on all three factors. Naisbitt (7) has identified the State of Washington as one of the five

bellwether States in America that are trendsetters for emerging cultural trends. Perhaps, the independence and self-reliance of residents of the Northwest may foster general skepticism that seems to underlie attitudes in these three factors. This explanation must be considered highly speculative. Furthermore, since the regression analyses were able to explain only 4 to 11 percent of the variance, the search for explanatory variables should focus on factors that were not measured in the present study. Lifestyles, health values, and attitude and views about drugs and advertising may have a greater explanatory role than the demographic variables examined in this study. The only other demographic variable that appeared to influence attitudes about prescription drug advertising to consumers was education. People with less education were most favorable on all the three attitude factors. This may reflect a response bias, or it may also reflect a greater desire for drug information.

People tended to have more positive attitudes having seen prototypical ads that more fully integrate risk information into the body of the ad compared to ads that gave special emphasis to the risk material. Evidently subjects reacted negatively to ads that emphasized risks. While television ads appeared to stimulate and make legitimate more drug information-seeking and requests for specific drugs from the physician, magazine ads led to stronger views of patient authority. The magazine may have given subjects more confidence in their own skills to evaluate statements about the truthfulness of ads.

In conclusion, this study suggests that attitudes about prescription drug advertising to consumers are multifaceted. Magazine advertising appears to be more fully accepted than television advertising and may better serve as a communications vehicle for complex messages such as those in prescription drug ads. Consumer attitudes do not appear to be firmly entrenched and are capable of being changed by virtue of the types of ads people view.

This observation implies that initial advertising may have an important role in forming impressions about the entire concept of direct-to-consumer advertising. Any regulatory control over such advertising may need to be flexible to adapt to the way different media are used and processed by consumers. However, until initial ads are more fully run, this is a subject that is open to speculation.

Interest in advertising directly to consumers appears to have waned in recent months. A survey conducted by a House of Representatives subcommittee found only 5 of 37 pharmaceutical companies were interested in further developing adver-

tising directed to consumers (8). This survey followed a symposium held in Washington in May 1984 in which several pharmaceutical company executives expressed strong reservations about direct-to-consumer advertising because of the direct costs of the ads and increased legal liability (9).

At present, the Food and Drug Administration has concluded that regulations overseeing direct-to-the-consumer advertising of prescription drugs are not necessary because of diminished interest among pharmaceutical companies. However, many observers of the pharmaceutical industry believe that conditions promoting direct-to-consumer advertising will continue to increase, leaving the door open for companies to promote products directly to their ultimate user—the patient.

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